Internet of Things

Essentials of Industrial Ethernet Networks for an OT Professional



Rockwell Automation

Allen-Bradley by ROCKWELL AUTOMATION

Course Number

CCP182

Course Purpose

After completing this course, you should be able to:

- Demonstrate understanding of basic Ethernet networking skills, terminology, and concepts
- Apply these skills when performing advanced network specification, configuration, and troubleshooting tasks

In this course, you will learn how to verify communications between devices, recognize data transmission types, and differentiate between OSI Model Layer 2 and Layer 3 switching functions.

You will also identify the routing process, monitor a switch using Device Manager and CLI commands, and work with IOS configuration files.

This course prepares you to more clearly understand key IT terms and concepts for communicating with other professionals on Connected Enterprise projects.

COURSE AGENDA

DAY 1

- Interpreting an Ethernet Network Hardware Layout
- Verifying Communications between Two Ethernet Devices
- Interpreting Basic Data Flow of Host-to-Host Ethernet Communications
- Recognizing Ethernet Data Transmission Types
- Recognizing Layer 2 Switching Functions on an Ethernet Network

DAY 2

- Recognizing Ethernet Network Loop Avoidance Protocols
- Interpreting the Network Address Translation (NAT) Scheme for an Ethernet Network
- Accessing Ethernet Switch Information Using CLI Commands
- Recognizing Layer 3 Switching Functions on an Ethernet Network
- Copying and Removing IOS Configuration Files on an Ethernet Switch

WHO SHOULD ATTEND

Operations technology (OT) professionals (such as control engineers) and others responsible for installing, configuring, and/or maintaining industrial devices on an Ethernet network should attend this course.

PREREQUISITES

To successfully complete this course, the ability to perform basic Windows operating system tasks is required.

STUDENT MATERIALS

To enhance and facilitate the students' learning experiences, the following materials are provided as part of the course package:

- Student Manual
  - Includes the key concepts, definitions, examples, and activities presented in this course
- Lab Book
  - Provides learning activities and hands-on practice. Solutions are included after each exercise for immediate feedback
- EtherNet/IP Procedures Guide:
  - Provides the steps required to complete tasks common to configuring devices to communicate over an EtherNet/IP network
- Cisco IOS Configuration Fundamentals Command Reference:
  - Contains comprehensive list of switch and router commands
- Using the Command-Line Interface:
  - Part of the Cisco Systems Software Configuration Guide (Industrial Ethernet 2000 Switch)
  - Shows more detailed breakdown of Cisco interface

HANDS-ON PRACTICE

Throughout this course, you will have the opportunity to practice the skills you have learned through a variety of hands-on exercises using an ABT-TDENET5700 EtherNet/IP workstation and Stratix® 8000 switch. Exercises focus on the skills introduced in each lesson.

COURSE LENGTH

This is a two-day course.

IACET CEUS

Rockwell Automation is authorized by IACET to offer 1.4 CEUs for this program.

TO REGISTER

To register for this or any other Rockwell Automation training course, contact your local authorized Allen-Bradley® Distributor or your local Sales/Support office for a complete listing of courses, descriptions, prices, and schedules.

You can also access course information via the Web at **http://www.rockwellautomation.com/training**

Rockwell Automation is accredited by the International Association for Continuing Education and Training (IACET) and is authorized to issue the IACET CEU. **Click here** to view the Rockwell Automation Certificate of Accreditation.

To be respectful of the environment, Rockwell Automation is transitioning some of its training courses to a paperless format. Students are asked to complete downloads and bring personal devices to these classes. A full list of digital/paperless courses is currently available through your local distributor.

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